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Full-scale F-35 'flies' above central New York hilltop

by Francis L. Crumb, Information Directorate

ROME, N.Y. — Perched atop a pedestal overlooking a rural valley in central New York sits the nation's air warrior of the future.

Sophisticated antenna testing is currently underway on the Lockheed Martin F-35 Joint Strike Fighter at the Air Force Research Laboratory's Information Directorate's Newport Antenna Research and Measurement Facility.

The full-scale F-35 model was designed and built by Advanced Technologies Inc. in Newport News, Va. The model weighs 8,500 pounds and has the capability to simulate all three variants of the JSF with interchangeable wing and tail components.

The Joint Strike Fighter is a stealthy, supersonic multi-role fighter designed to replace a wide range of aging fighter and strike aircraft, including the AV-8B Harrier, A-10, F-16, F/A-18, and the United Kingdom's Harrier GR 7 and Sea Harrier. Three variants derived from a common design will ensure that the F-35 meets the performance needs of the Air Force, Navy and Marine Corps, as well as allied defense forces worldwide. Lockheed Martin is developing the F-35 in collaboration with its principal partners, Northrop Grumman and BAE Systems.

AFRL's Newport site, a world-class antenna measurement facility that has been in existence for over 30 years, provides multiple outdoor test ranges. The facility owns models of all Air Force tactical air assets and, in recent years, has added models of aircraft from other services.

"Lockheed Martin has contracted with AFRL in an attempt to mitigate any future problems," said Captain Gabe Mounce, program manager. "The goal is to identify problems before the aircraft enters a production mode and flight testing. This is an example of the smart way to test."

The Newport facility is used to evaluate antennas and antenna systems in a far field "free space" environment, to determine radiation pattern changes due to airframe effects, to evaluate antenna-to-antenna system coupling and to support an advanced antenna measurement technology development. Located 26 miles east of AFRL's Rome Research Site, the facility consists of two hilltops with six data gathering locations and ten measurement ranges. The two hills are 1.5 miles apart, with a 430-foot valley in between. Transmit and receive equipment and heavy duty three-axis aircraft pedestals are located on each hilltop.

"In only eight minutes, engineers can obtain more data than flying the still-to-be-built F-35 for more than two hours," said Capt. Mounce. "We will provide Lockheed Martin very accurate data on how the antennas are performing. This is the only facility of its kind in the Air Force. We are fortunate to be able to provide Lockheed Martin and the F-35 System Program Office with vital testing that is faster, smarter and more economical."

A full-scale F-35 Joint Strike Fighter model is perched atop a pedestal overlooking a rural valley in central New York.

"The beginning of aperture testing in this world-class test facility is a significant achievement in the F-35 JSF program," said Bob Elrod, Lockheed Martin executive vice president and F-35 JSF program general manager. "This is a key milestone on the way to our first flight date in 2006."

In addition to providing and managing their outdoor an-

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tenna test ranges, AFRL is providing personnel from its Site Operations Division fabrication shop to manufacture replicas of the F-35's external fuel tanks, weapons and landing gear to support the JSF test program.

Once in production, thousands of the F-35s are expected to be provided to the Department of Defense. The Air Force will receive a conventional version, while the Navy will be provided with an aircraft carrier version and the Marine Corps will be equipped with a Short Take Off and Vertical Landing model. @